

Fluorescence in Dermatology; synopsis

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Abstract

Dermatoscopes are non-invasive, artistic, cost-effective diagnostic and prognostic tools to help identify neoplastic and non-neoplastic skin lesions (inflammatory and infectious), and the augmented ultraviolet and sub-ultraviolet varieties are a revolutionary, innovative auxiliary diagnostic tool to help visualize the non-discernible with the usual conventional dermatoscope. The existing literature however is still in its infancy and is limited by inconsistent and misleading terminology, such as the distinction between fluorescence and reflectance. It also guides the management of inflammatory skin diseases and serves as an aid in monitoring response to therapy and the early detection of treatment-related side effects. There is a need for further studies with larger sample sizes, a high level of evidence, and control groups for a better understanding and consistent terminology.

Ultraviolet-induced fluorescence dermoscopy (UVF dermoscopy) is a novel, portable technique that functions as a miniaturised Wood's lamp for dermatological assessment. It uses a UV light source to induce fluorescence in cutaneous chromophores through the Stokes shift phenomenon, allowing detection of UV-induced fluorescent signals. Initially applied mainly to pigmentary skin tumours, such as malignant melanoma, melanocytic naevi, basal cell carcinoma, and seborrhoeic keratosis, its use has recently expanded. UVF dermoscopy is now increasingly utilised in the evaluation of inflammatory dermatoses, including psoriasis, lichen planus, vitiligo, and porokeratosis, as well as granulomatous and keratinisation disorders, sebaceous gland diseases, and various bacterial and fungal infections.

In fact, UV dermoscopy complements and doesn't replace the conventional dermatoscopy, by reducing unnecessary excisions and diagnostic biopsies, facilitating early detection of tumour recurrences. Clinicians should be conscious of their peculiarities, artefacts, limitations, and safety concerns to optimize their diagnostic accuracy and ensure patients' safety.

This paper aims to focus on uses, advantages, and limitations, based on the current peer-reviewed literature.

Keywords: dermatoscope, imaging, ultraviolet, ultraviolet-induced fluorescence dermoscopy, biopsy, skin cancer, diagnosis.